UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL EXPOSURE RESEARCH LABORATORY
ENVIRONMENTAL PHOTOGRAPHIC INTERPRETATION CENTER
12201 SUNRISE VALLEY DRIVE • 555 NATIONAL CENTER • RESTON, VA 20192

February 15, 2002

OFFICE OF
RESEARCH AND DEVELOPMENT

MEMORANDUM

SUBJECT: Interim Report for Downers Grove Groundwater Assessment, Downers Grove, Illinois

FROM: Joan Bozik, CSR
Environmental Photographic Interpretation Center
Landscape Ecology Branch

TO: Steve Faryan, OSC (SE-5J)
Environmental Scientist
Region V

Per your request, attached is an Interim report for the Downers Grove Groundwater Assessment Site. The report contains five years of analysis: 1956, 1963, 1967, 1972 and 1975. Additional years are currently being analyzed and will be included in the final report.

As an interim product, this report has not gone through the EPA quality assurance cycle. Any errors discovered will be corrected during preparation of the final report.

Once you have reviewed the report, we would appreciate your comments on it. Something you might want to consider is the size of the report. Since there is so much activity going on at the site, we wondered if perhaps you would like the final report to be in a large format. Our large format reports are about 20" x 24" and contain enlarged aerial analysis overlays (16" x 16") and supporting narrative text. It's the same analysis but in a large format.

We look forward to receiving your comments. Please contact me at (703) 648-4288 if you need further information or assistance.

Attachments

cc: (w/o attachments)
Donald Garofalo, LEB/EPIC

TS-PIC-20205584S
February 2002

AERIAL PHOTOGRAPHIC ANALYSIS OF DOWNERS GROVE GROUNDWATER ASSESSMENT STUDY AREA

Du Page County, Illinois

Interim Report

by

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Contract No. 68-D-00-267

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LAS VEGAS, NEVADA 89193-3478

NOTICE

As an interim product, this document has not gone through the complete EPA quality assurance cycle. Any errors that are discovered during preparation of the final report will be corrected therein.

METHODOLOGY

This report was prepared using a standard methodology that includes the following steps:

- data identification and acquisition,
- photographic analysis and interpretation, and
- graphics and text preparation.

These steps are described below. Subsections also address details related to specific kinds of analyses that may be required to identify environmental features such as surface drainage and wetlands. All operational steps and processes used to perform this work (including data identification and acquisition, photographic analysis and interpretation, and graphics and text preparation) adhere to strict QA/QC guidelines and standard operating procedures (SOPs). These guidelines and procedures are documented in the Master Quality Assurance Project Plan (QAPP) prepared for Remote Sensing Support Services Contract No. 68-D-00-267 (LMS, 2001).

Data identification and acquisition included a search of government and commercial sources of historical aerial film for the study area. Photographs with optimal spatial and temporal resolution and image quality were identified for acquisition. In addition, U.S. Geological Survey (USGS) topographic maps were obtained to show the study area location and to provide geographic and topographic context.

To conduct this analysis, the analyst examined diapositives (transparencies) of historical aerial photographs showing the study area. Diapositives are most often used for analysis instead of prints because the diapositives have superior photographic resolution. They show minute details of significant environmental features that may not be discernible on a paper print.

A photographic analyst uses a stereoscope to view adjacent, overlapping pairs of diapositives on a backlit light table. In most cases, the stereoscope

is capable of various magnifications up to 60 power. Stereoscopic viewing involves using the principle of parallax (observing a feature from slightly different positions) to observe a three-dimensional representation of the area of interest. The stereoscope enhances the photo interpretation process by allowing the analyst to observe vertical as well as horizontal spatial relationships of natural and cultural features.

The process of photographic analysis involves the visual examination and comparison of many components of the photographic image. These components include shadow, tone, color, texture, shape, size, pattern, and landscape context of individual elements of a photograph. The photo analyst identifies objects, features, and "signatures" associated with specific environmental conditions or events. The term "signature" refers to a combination of components or characteristics that indicate a specific object, condition, or pattern of environmental significance. The academic and professional training, photo interpretation experience gained through repetitive observations of similar features or activities, and deductive logic of the analyst as well as background information from collateral sources (e.g., site maps, geologic reports, soil surveys) are critical factors employed in the photographic analysis.

The analyst records the results of the analysis by using a standard set of annotations and terminology to identify objects and features observed on the diapositives. Significant findings are annotated on overlays attached to the photographic or computer-reproduced prints in the report and discussed in the accompanying text. Annotations that are self-explanatory may not be discussed in the text. The annotations are defined in the legend that accompanies each print and in the text when first used.

Objects and features are identified in the graphics and text according to the analyst's degree of confidence in the evidence. A distinction is made between certain, probable, and possible identifications. When the analyst believes the identification is unmistakable (certain), no qualifier is used. Probable is used when a limited number of discernible characteristics allow the analyst to be reasonably sure of a particular identification. Possible is used when only a few characteristics are discernible, and the analyst can only infer an identification.

The prints in this report have been reproduced, either by photographic or computer methods, from the original film. Reproductions are made from the original film and may be either contact (the same size) prints or enlargements, depending on the scale of the original film. Any computer-produced prints used in this report are generated from scans of the film at approximately 1,300 dots per inch (dpi) and printed at 720 dpi. Although the reproductions allow effective display of the interpretive annotations, they may have less photographic resolution than the original film. Therefore, some of the objects and features identified in the original image and described in the text may not be as clearly discernible on the prints in this report.

Study area boundaries shown in this report were determined from aerial photographs or collateral data and do not denote legal property lines or ownership.

Surface Drainage

The surface drainage analysis produced for this report identifies the direction and potential path that a liquid spill or surface runoff would follow based on the topography of the terrain and the presence of discernible obstacles to surface flow. The analyst determines the direction of surface drainage by stereoscopic analysis of the aerial photographs and by examining USGS topographic maps. Site-specific surface drainage patterns are annotated on the map or photo overlay. Where the direction of subtle drainage cannot be determined, an indeterminate drainage line symbol is used. Regional surface flow is ascertained from the USGS topographic maps.

PHOTOGRAPHIC ANALYSIS

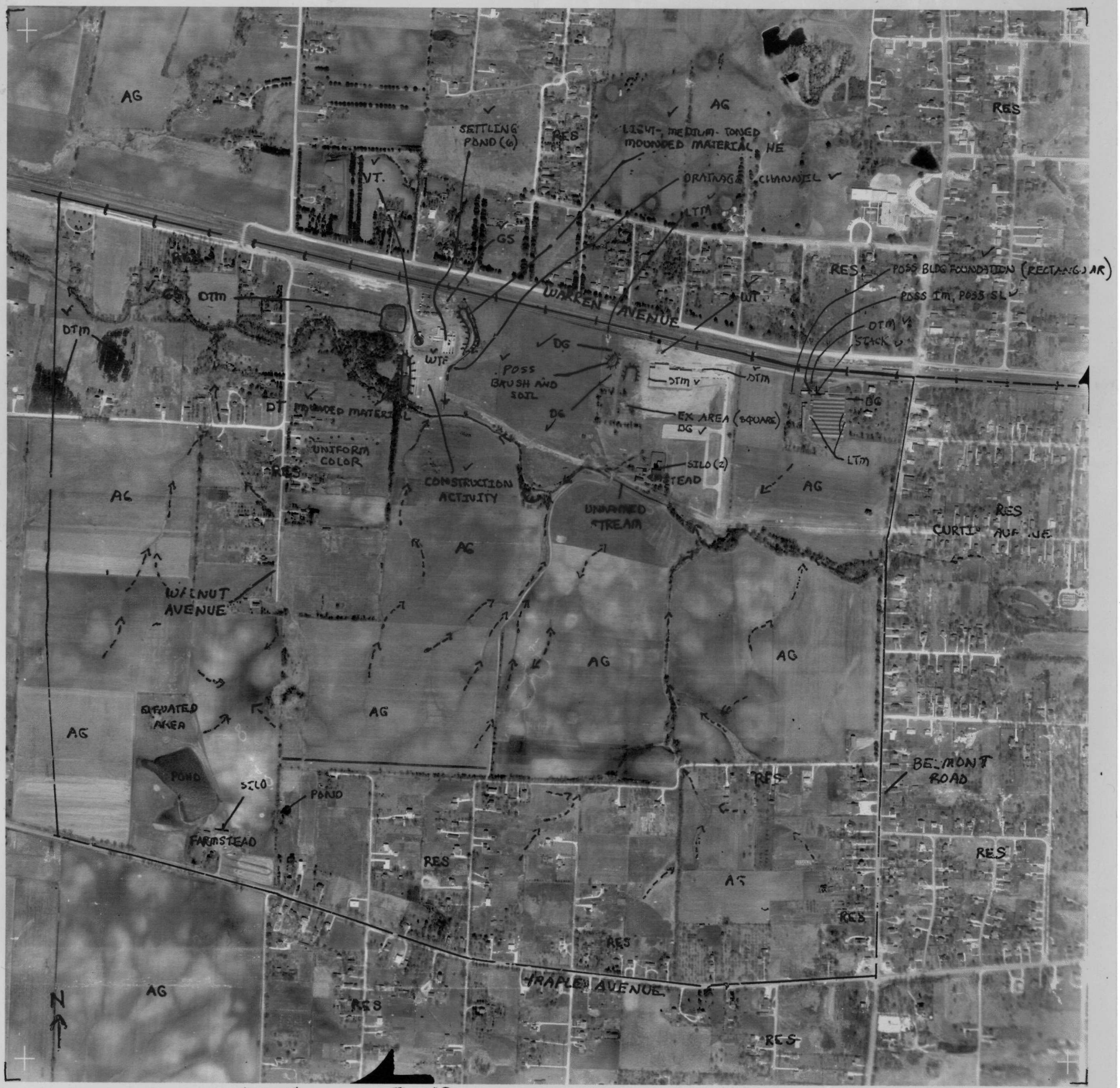
APRIL 13, 1956 (FIGURE 3)

In the northern section of the site, three large building complexes are visible along the railroad line. The westernmost building complex is a waste treatment facility (WTF). A large vertical storage tank (VT), numerous (six) settling ponds, construction activity, and ground scars (GS; probably due to construction activity) are visible. The ground scar located west of the vertical storage tank appears to be caused by earth-moving and grading activity, revealing dark-toned material (DTM; probable soil) at the surface. Heavy equipment (HE), most likely used in the earth-moving activity, is observed beside the easternmost of two large mounds of material. This mound is composed of both light- and medium-toned, uniform material. The mound located southwest of the vertical tank is composed of uniform, dark-toned material, suggesting possible soil at both locations. A small drainage channel is visible east of the waste treatment facility. Liquids in the channel empty into an unnamed stream which traverses the site from southeast to northwest.

To the east is a large building (not annotated) and water tank (WT). Two areas of dark-toned material are noted in close proximity to this building. Just to the west are light-toned material (LTM), a pile of possible brush and soil, and two areas of disturbed ground (DG). Southwest of the building is a square-shaped excavated area (EX) and disturbed ground.

In the northeastern section of the site is the third building complex. A smokestack (STACK) is connected to one of the buildings (not annotated). Located near the smokestack are dark-toned material (possible coal), a small possible impoundment (IM) containing possible standing liquid (SL), and a rectangular-shaped possible building (BLDG) foundation. Several areas of light-toned material and disturbed ground are noted nearby.

1956-607.tif



DOWERS GROVE	4/13/56	CHICAGO AERIAL SURVEY	FRAMES 605, 607, 608, 609 EAC 65365, 65366, 67090, 67091	MISSION —	SCALE 20K	PHOTO SCALE

Approximately half the site is used for agricultural (AG) purposes, and two farmsteads with silos are visible; one farmstead in the north-central part of the site along the unnamed stream, and the second in the southwestern section of the site. Two ponds and an elevated area are noted near the latter farmstead. The southern and northwestern portions of the site are primarily residential (RES). There are two sizable areas of dark-toned material in the northwest which may be the result of burning activity or of the spreading of manure.

NOVEMBER 29, 1963 (FIGURE 4)

For discussion purposes, the site is divided into four subareas (A through D) due to the substantial increase in activity at this industrial park throughout the analysis period. The internal road network (not completed until 1990) on site is used to delineate these subarea boundaries. Subarea A, in the northern section of the site, is bounded by Walnut and Curtis Avenues, Belmont Road, and the railroad line. Subarea B, in the central section of the site, is bounded by Walnut and Wisconsin Avenues, Belmont Road, and Curtis Avenue. Subarea C, in the southern section of the site, is bounded by Walnut and Maple Avenues, Belmont Road, and Wisconsin Avenue. Subarea D, in the western section of the site, is bounded by the future (1990) location of the North-South Tollway, Maple and Walnut Avenues, and the railroad line.

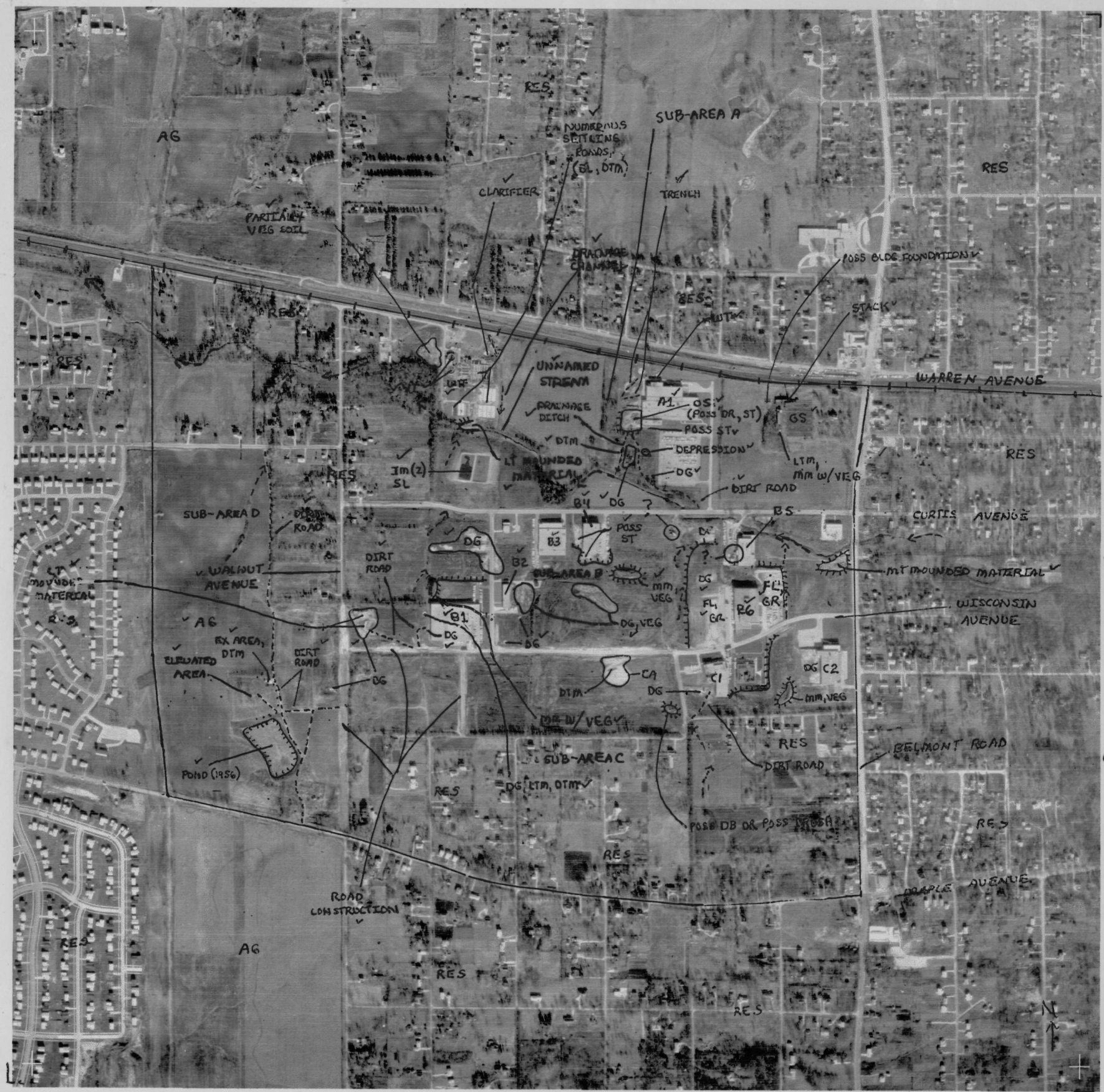
Only those buildings which demonstrate activities of environmental significance or are needed for geographic reference purposes are annotated to aid the reader. These structures are labeled using an alphanumeric scheme, with a letter (A, B, C, or D) to represent the subarea in which each is located and a sequential number (1,2,3..).

Subarea A

In the western part of this subarea, the waste treatment facility remains visible. Two large vertical storage tanks, numerous settling ponds containing standing liquid and dark-toned material, a clarifier (not functional), drainage channel, and light-toned mounded material (probably excavated soil) are evident. In subsequent analysis years, the vertical tanks, clarifiers, and settling basins will no longer be annotated or discussed unless activity of environmental significance is observed. Just to the west of the vertical storage tanks is an area of partially vegetated soil. South of the waste treatment facility and across the unnamed stream are two expansive, rectangular-shaped impoundments. The western impoundment contains standing liquid and the eastern impoundment is dry. A defined dirt road accessing the impoundments cannot be identified on this image, although faint ground scars (not annotated) leading from the impoundments to Curtis Avenue are noticeable. (NOTE: The 1960 image, which is not included in this report, did not show the impoundments nor indications of their construction.)

1963-394.tif

CHANGING TOPOGRAPHY



A1

B1-B5

C1-C2

PRIORS GROVE	11/22/63	CHICAGO AREA SURVEY	FRAMES 392, 393, 394, 395 EPIC 65169, 65370; 67088; 67089	MISSION 63400	SCALE 24K	PHOTO SCALE

2

To the east is the large building (A1) and water tank. Alongside the southwestern corner of this building is an open storage area (OS) containing possible drums (DR) and stains (ST). A possible stain is also noted just to the east of the open storage area. To the north are two linear trenches, which are most likely man-made. A drainage ditch extends from the southern edge of the open storage area to the unnamed stream to the south. Dark-toned material visible near the center of the ditch may represent an area for the pooling of liquid. East of the drainage ditch is a swath of disturbed ground, and a dirt road with well-defined tire tracks extending southeast from the open storage area to Curtis Avenue. A second, smaller area of disturbed ground and a depression (possibly the location of soil excavation) are visible between the dirt road and an expansive parking area to the east (not annotated).

In the northeastern section of subarea A, the largest structure associated with the building complex visible in 1956 has been removed, leaving a large ground scar in its place. Only two small, rectangular-shaped structures (not annotated), as well as the smokestack and the possible building foundation, remain visible. Light-toned material, and mounded material (MM) covered with vegetation (VEG) are also noted.

Subarea B

Near the intersection of Walnut and Wisconsin Avenues, in the western section of this subarea, a large area of disturbed ground (future possible construction site) is noted. Within this area are piles of uniform, light-toned mounded material. Access to this area is granted by a dirt road leading from Wisconsin Avenue. To the east a second dirt road, also originating at Wisconsin Avenue extends to a small area of disturbed ground west of building B1. A second area of disturbed ground containing both light-toned and dark-toned materials is observed just to the north. Adjacent to the northwestern corner of the building is mounded material covered with vegetation. North of building B1 is an extensive area of disturbed ground (future possible construction site).

Northeast of building B1 is building B2. Two small areas of disturbed ground are visible to the south of this building (possible sign positions) and two large area of disturbed ground and partial vegetation are noted east of this building.

Northeast of building B2, buildings B3 and B4 are situated adjacent to Curtis Avenue. Two possible stains are noted near building B4. Southeast of building B4 is mounded material covered with vegetation.

In the eastern section of subarea B are buildings B5 and B6. Adjacent to these buildings are several areas of disturbed ground which are likely related to construction activity. Fill (FL) and subsequent grading activity (GR) have been used to elevate the ground surface near building B6, as is evidenced by a distinct, sharp change in the topography around the building, and which has resulted in an alteration of the natural drainage patterns. To the east, near Belmont Road, an area of medium-toned (MT) mounded material (probable soil) is noted.

Subarea C

Most of the southern section of this subarea is comprised of residential housing. Unless environmental activity is observed, this part of the subarea will continue to be annotated, but will no longer be discussed in this report. In the western section of this subarea, new road construction is visible. A large cleared area (CA), possibly in preparation for new construction activity, and a swath of dark-toned material are noted adjacent to Wisconsin Avenue in the central part of the subarea. A possible pile of debris (DB) or brush is observed to the southeast of this cleared area.

Several buildings are located in the eastern section of this subarea. A dirt road extends from building C1 to a residential street (not annotated). Disturbed ground is noted near this dirt road. More disturbed ground is visible along the west side of building C2 and is most likely associated with past construction activity. Vegetation-covered mounded material is evident southwest of building C2.

Subarea D

The northern section of this subarea is comprised of residential housing. Unless environmentally significant activity is observed, although it will continue to be annotated, this part of the subarea will no longer be discussed in this report.

In the southern section of this subarea, the larger of the two ponds noted in 1956 has been drained and the farmstead is no longer present. Numerous well-defined dirt roads traverse the area, one of which leads to the top of the elevated area. Excavation activity and dark-toned material are discernible along the road at the northeastern corner of this elevated area. To the east a small area of disturbed ground is observed adjacent to the portion of Walnut Avenue that is under construction. The fields remaining in the subarea continue to be utilized for agricultural purposes. New residential housing tracts have been constructed to the west and southwest of the site.

OCTOBER 19, 1967 (FIGURE 5)

This 1967 image has good resolution and allows more a more-detailed examination of the features than for previous analysis years. Enlargements of sections of the site where there is significant activity have been produced. The entire site is shown in Figure 3, and a detailed analysis and accompanying text describe the features in the extreme eastern portions of subareas A and B, practically all of subarea C, and the northern half of subarea D. Figures 4 and 5 provide enlargements and a detailed analysis of the remainder of the site.

Numerous new buildings have been constructed on site since 1967. Only those buildings, or areas surrounding buildings, which demonstrate activity of environmental significance will be annotated. The area surrounding the site remains primarily residential.

Subarea A

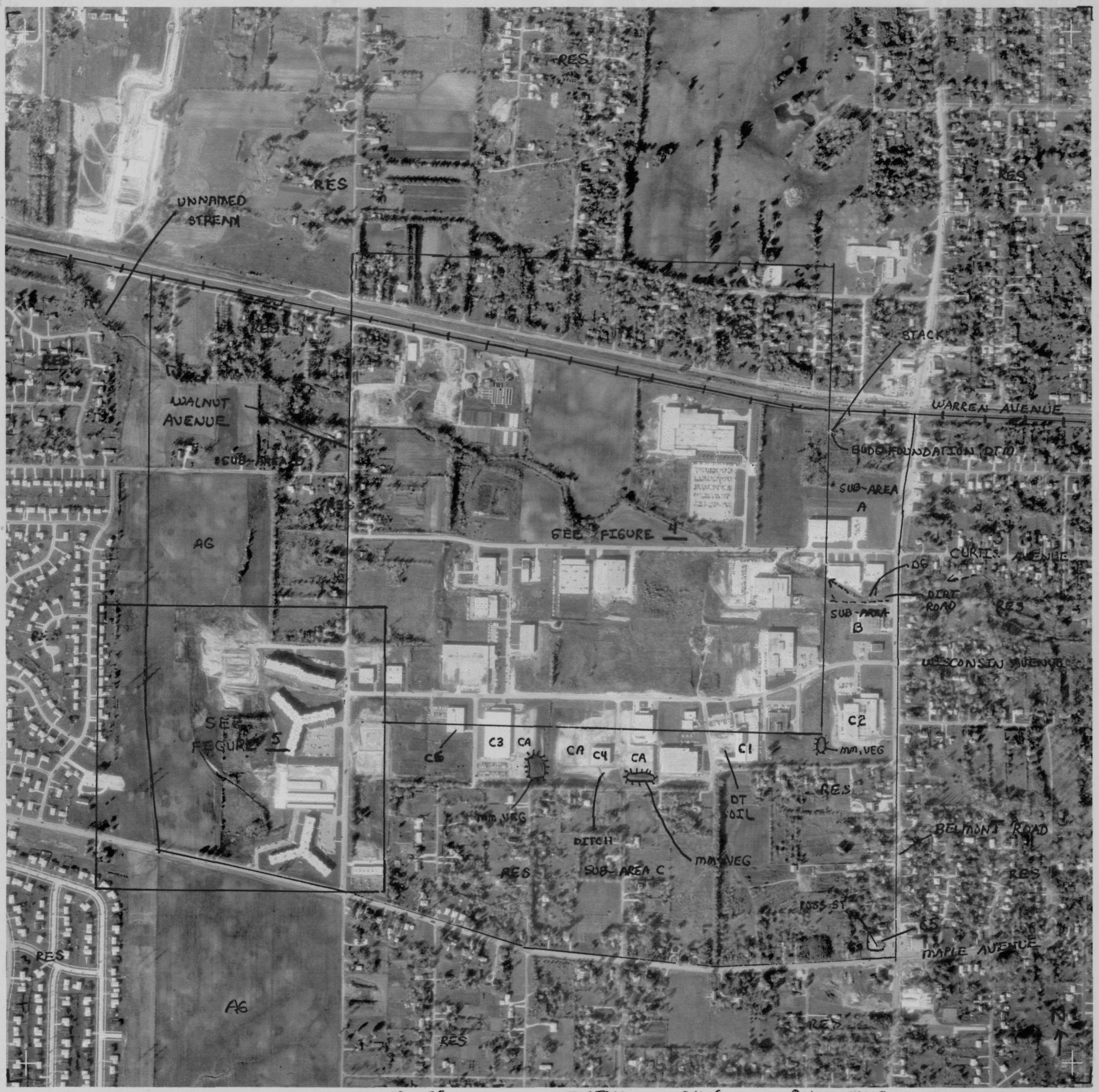
The smokestack observed in 1956 and 1963 remains visible; however, the building (not previously annotated) it had been attached to has been removed. The foundation of this structure remains and dark-toned material at the former location of the building are observed.

Subarea B

Two areas of disturbed ground are observed between the unnamed stream and an east-west oriented dirt road. The dirt road extends from Belmont Avenue, west toward an open storage area associated with building B5 (see Figure 4).

Subarea C

In the western section of this subarea, mounded material covered with vegetation and a cleared area are noted in close proximity to building C3. Near building C4 are two additional cleared areas (likely associated with past, or in preparation for future, construction activity). South of this structure is a well-defined ditch, likely to be used to place utility lines to connect this structure to underground utility mains. East of the ditch is a second



A1

B6

C5
C6

10/19/67 | DOWNERS GROVE | A.S.C.S. | FRAMES 270, 271, 272 EPIC 65371, 65372, 66862. | MISSION BWS. | SCALE 20" | PHOTO SCALE

(3)

pile of vegetation-covered mounded material. Building C1 has expanded operations since 1963, and the southern portion of this newly constructed building. Dark-toned (DT) soil is noted just west of the addition. A third pile of mounded material covered with vegetation is located to the southwest of building C2. All three mounds may represent extra trucked-in fill used to elevate building sites, or are materials excavated at individual building sites. At the southeastern corner of the site, at the intersection of Belmont Road and Maple Avenue, possible ground stains are noted. This corner lot appears to be occupied by a gas station (building C5).

Subarea D

No significant environmental activity is observed in this portion of the site (see Figure 5).

OCTOBER 19, 1967 (FIGURE 6)

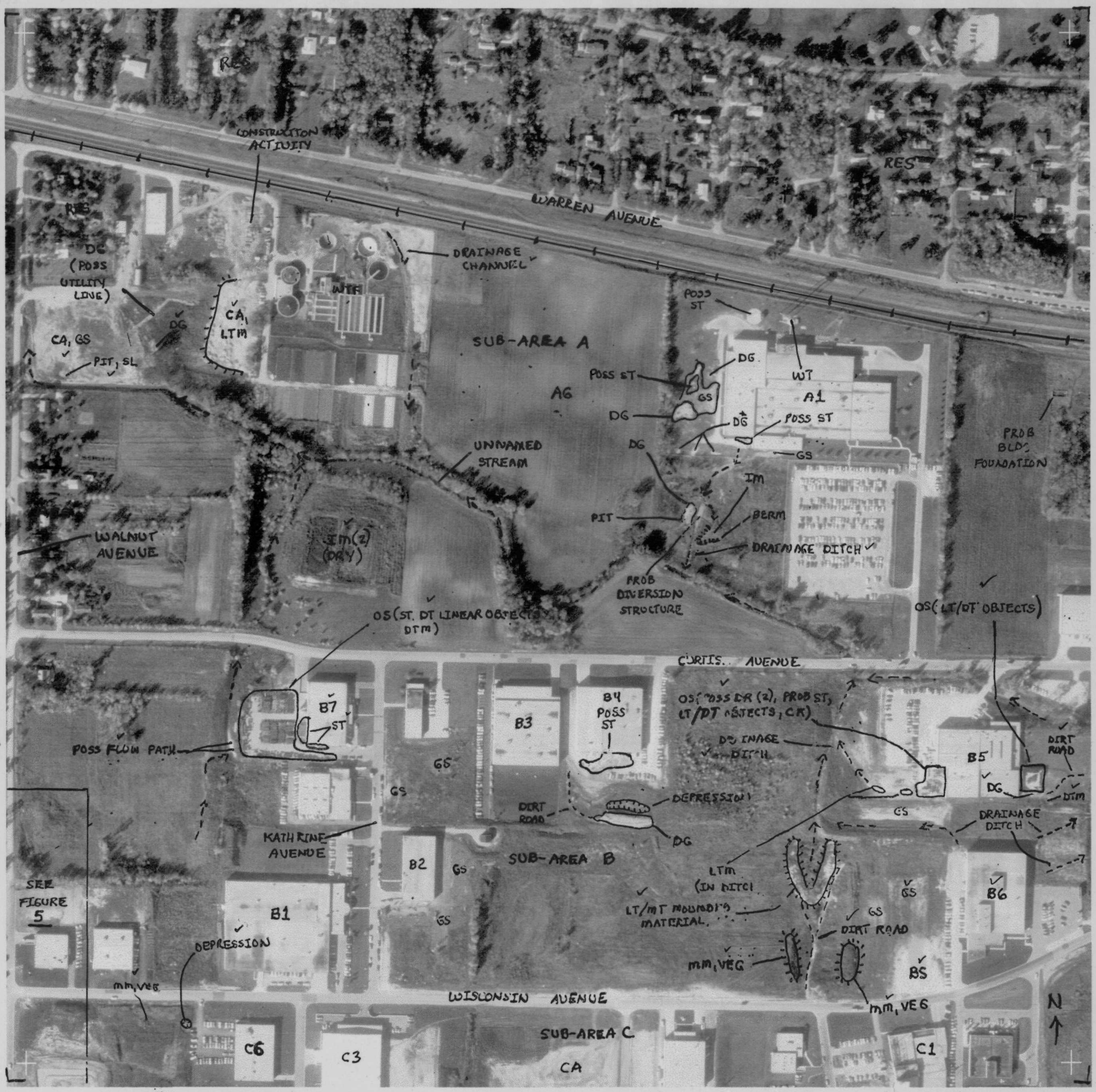
This image is an enlargement of Figure 3 and includes most of subareas A and B and the northernmost portion of subarea C.

Subarea A

In the western part of this subarea, the waste treatment facility remains visible and is expanding operations. The drainage channel remains evident just to the east of the facility. The area west of the facility has been cleared of vegetation and light-toned material, uniform in color, has been deposited in that location. Most of this material has been graded, but numerous small piles (not individually annotated) are observed. To the north is construction activity. Additional activity to the west has resulted in a second cleared area containing ground scars and a pit containing standing liquid. Two areas of disturbed ground are also noted in this location, one which is circular in shape and the other is linear and extends east from the eastern fringe of the cleared area to a point just west of the waste treatment facility. This linear feature may trace the location of buried utility lines.

South of the waste treatment facility and across the unnamed stream are the two expansive, rectangular-shaped former impoundments. Each impoundment has been overgrown with vegetation (not annotated). No defined dirt road is noted that would provide access to these former impoundments.

To the east, north of building A1, a possible stain is observed on a circular-shaped pad (not annotated) near the water tank. Just west and south of the building are two areas of possible staining, several areas of disturbed ground, and ground scars. Surface runoff from the southern section of the building is channeled south toward the unnamed stream via the drainage ditch. A diversion structure is noted within the ditch, channeling runoff into an impoundment to the east; however, no liquid is present. A berm is discernible on the southern and western sides of the impoundment. West of the ditch is an area of disturbed ground and a pit where materials may have been excavated to help build the berm.



A1

B7

C6

10/18/67 DOWNERS GROVE ASCS

PHOTO SCALE.

4

In the northeastern section of subarea A, the rectangular-shaped probable building foundation remains visible.

Subarea B

A new building (B7) is now located along Curtis Road where, in 1963, disturbed ground was noted. Ground stains are visible adjacent to the southwest corned of the building. West of the structure is an open storage area which contains uniformly placed, dark-toned linear objects, dark-toned material, and ground stains. Most of this area may be used as a drying area for finished products. Two darkened (possibly stained) possible flow paths are located at the southwester corner of the open storage area, and may allow surface runoff to migrate toward the on-site drainage network leading to the unnamed stream. To the south, near buildings B2 and B3, there are numerous ground scars.

Further east, immediately south of building B4, there is an area of possible staining. A dirt extends from the parking area (not annotated) along the south side of the building to a swath of disturbed ground. A depression is noted just north of the disturbed ground.

In the eastern section of this subarea, two open storage areas are located alongside buildings B5. The open storage area on the west side of the building contains two possible drums, probable stains, light-toned and dark-toned objects and crates (CR). A drainage ditch, originating at the western portion of the open storage area, channels surface runoff in a northerly direction toward the unnamed stream. Light-toned material is visible at two locations within the ditch. It is not possible to determine if this material is sediment or a liquid. A ground scar is noted south of the building B5 and the open storage area on the east side of the building is partially fenced (not annotated) and contains light-toned and dark-toned objects. The ground surface south of the open storage area is disturbed, and dark-toned material is noticeable. A well-defined dirt road extends east from this open storage area to Belmont Road (see Figure 3).

South of building B5 several well-defined drainage ditches, ground scars, and bare soil are apparent near building B6. West of this building, a dirt road extends north from Wisconsin Avenue and into an open field (not annotated), where uniform, light- and medium-toned mounds of materials have been hauled-in and deposited in a V-shaped pattern. A drainageway flows to the north from the center of this mound. Two additional mounds covered with vegetation are evident, one on either side of the dirt road near Wisconsin Avenue.

Subarea C

On the west side of the subarea, west of building C6, there are a depression and a small mound covered with vegetation. No other significant environmental activity is observed within this portion of the subarea.

Subarea D

This subarea is not covered on this enlargement; see Figures 3 and 5.

OCTOBER 19, 1967 (FIGURE 7)

This image is an enlargement of Figure 3 and includes primarily westernmost portions of subareas B and C and the southern half of subarea D.

Subarea A

This subarea is not covered on this enlargement; see Figures 3 and 4.

Subarea B

Building B8 is located on the northeast corner of the intersection of Wisconsin and Walnut avenues. A flow path and trench (possibly used for utility lines) are observed near this building.

Subarea C

An extensive construction area is located southeast of the intersection of Wisconsin and Walnut avenues. Standing liquid, disturbed ground, and ground scars are observed and are likely associated with the construction activity. Northeast of the intersection of Walnut and Maple avenues, a new building (C7) has been constructed. North of this building the ground surface is scarred in two locations.

Subarea D

Four large buildings (D1, D2, and D4) and a building complex (D3) have been constructed or are in stages of completion. West of building D1 is a construction area. Uniform, light-toned fill and numerous ground scars, likely resulting from the use of heavy equipment, are also noted. To the south of the construction area, an area has been excavated; from which soil has probably been hauled north and used as fill in the construction area. The dirt road that connects the excavation area to the construction area also connects to an area of probable solid waste (SW) to the southwest. Southeast of the probable solid waste, ground scars and a pit are visible on the slopes of the elevated area. South of the pit is an expansive area of disturbed ground and ground scars, probably construction related. Near Maple Avenue, in the southern

section of the subarea, more disturbed ground, ground scars, and light-toned material are visible. Surface runoff enters a well-defined drainage channel originating near the southern site boundary. The channel passes very close to the probable solid waste and the fill at the construction area and carries the liquid within it north to the unnamed stream (see Figure 3).

1967-271-c.tif

D4

B8

C7

DOWNERS GROVE	10/19/67	ASCS	FRAMES 270, 271, 272 SPEC 65371, 65372, 66662	MISSION BWS	SCALE 20K	PHOTO SCALE

5

APRIL 25, 1972 (FIGURE 8)

The image available for 1972 has excellent resolution which allows more detailed examination of the features than for previous analysis years. Enlargements of sections of the site where there is significant activity are produced. The entire site is shown in Figure 6, with the analysis results describing the features in the northwestern and southern portions of the site provided below. Enlargements for and details concerning the northeastern and southwestern portions of the site are shown and discussed in Figure 7 and Figure 8, respectively.

Several new buildings have been constructed on site since 1967; however, only those buildings or areas surrounding buildings which demonstrate activity of environmental significance are annotated. The area surrounding the site remains primarily residential.

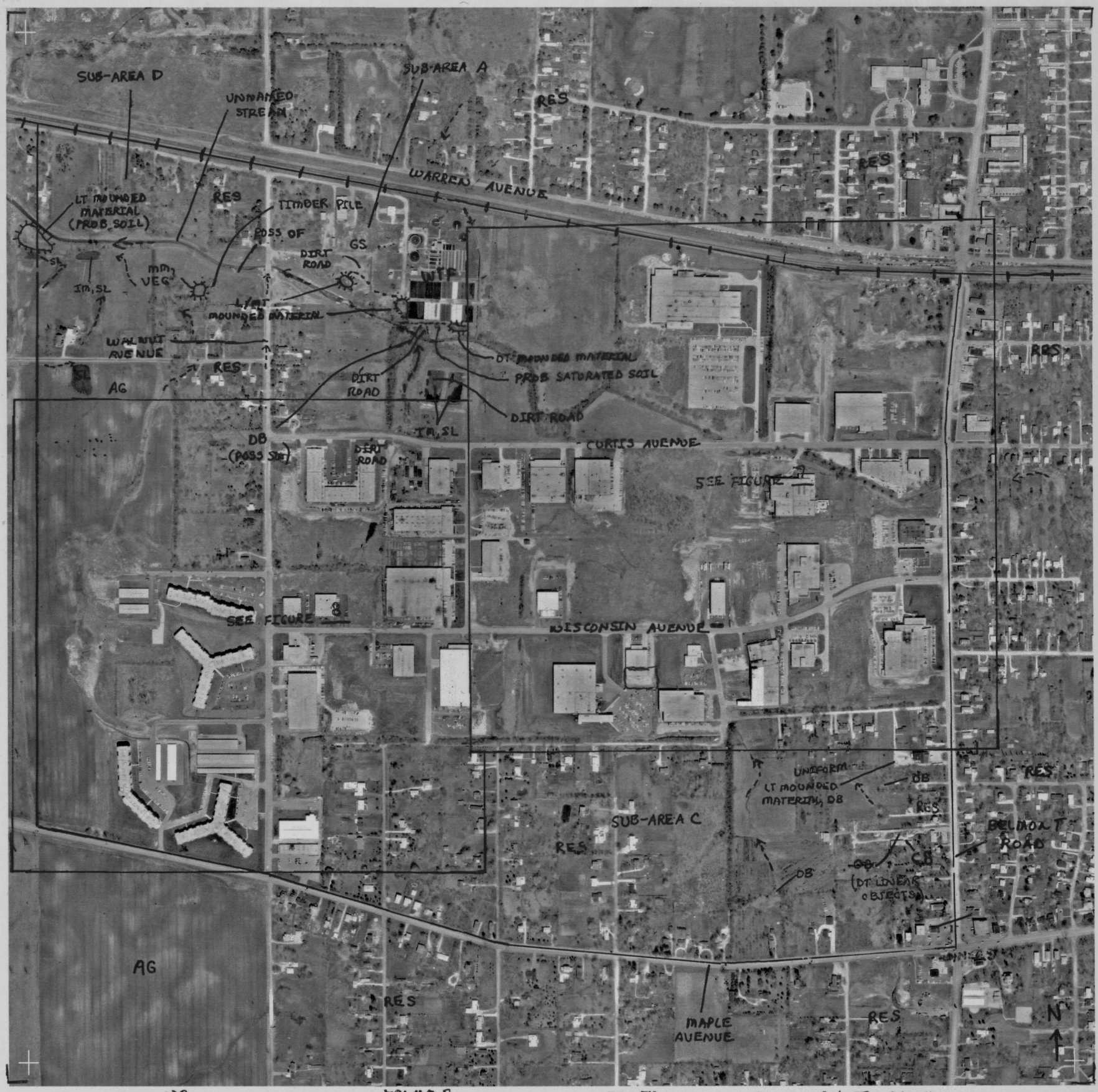
Subarea A

Only the western side of this subarea is covered in this photograph. East of Walnut Avenue, the waste treatment facility remains visible. South and west of the facility, a dirt road connects several mounds of uniform material; two of which are composed of light- and medium-toned material, and the third of dark-toned material. Debris (possible solid waste) and probable saturated soil are noted between the dirt road and the unnamed stream to the south. Numerous ground scars are also visible west of the facility.

South of the waste treatment facility and across the stream, there are the two expansive, rectangular-shaped impoundments. Standing liquid is apparent in the southern sections of both impoundments and is most likely associated with either snow melt or recent heavy rainfall. In 1967 both impoundments were overgrown with vegetation and were not in use. A faint dirt road provided access to the impoundments from Curtis Avenue (also, see Figure 8).

Subarea B

This subarea is not covered on this photograph; see Figures 7 and 8.



4/25/72 | OWNERS GROVE | SIAWELL | FRAMES 676, 678, 680 SPIL 66866, 66867, 66868 | MISSION — | SCALE 12K | PHOTO SCALE

C8

Subarea C

In the eastern portion of the subarea, an open storage area containing dark-toned linear objects is observed in the vicinity of building C8. North of this building are a small pile of debris and an area containing light-toned mounded material and debris. Additional debris is noted in a field (not annotated) west of building C8. No environmentally significant activity is observed near building C5 (gas station) at the northeast corner of Maple Avenue and Belmont Road or in the remaining residential areas in this subarea.

Subarea D

In the northwestern part of the site, near the western site boundary, standing liquid is evident at the north end of the agricultural field (not annotated) alongside a residential road (not annotated). The pooling of liquid at this location may be the result of the spring thaw in conjunction with channeled runoff emanating from the residential areas (not visible on this image) to the west and the agricultural field to the south; although well-defined channels cannot be identified in the field. More standing liquid is located adjacent to uniform, light-toned mounded material (probable soil) along the south bank of the unnamed stream. A dirt road (off site; not annotated) extends from a residential road (not annotated), north to this area. Due to the deposition of the material, the natural drainage pattern has been altered, channeling liquid to pool just south of the mound. East of the mound, near the stream bank is an impoundment containing standing liquid that is channeled into the impoundment from several directions. To the east is mounded material and vegetation, a small timber pile, and a possible outfall (OF).

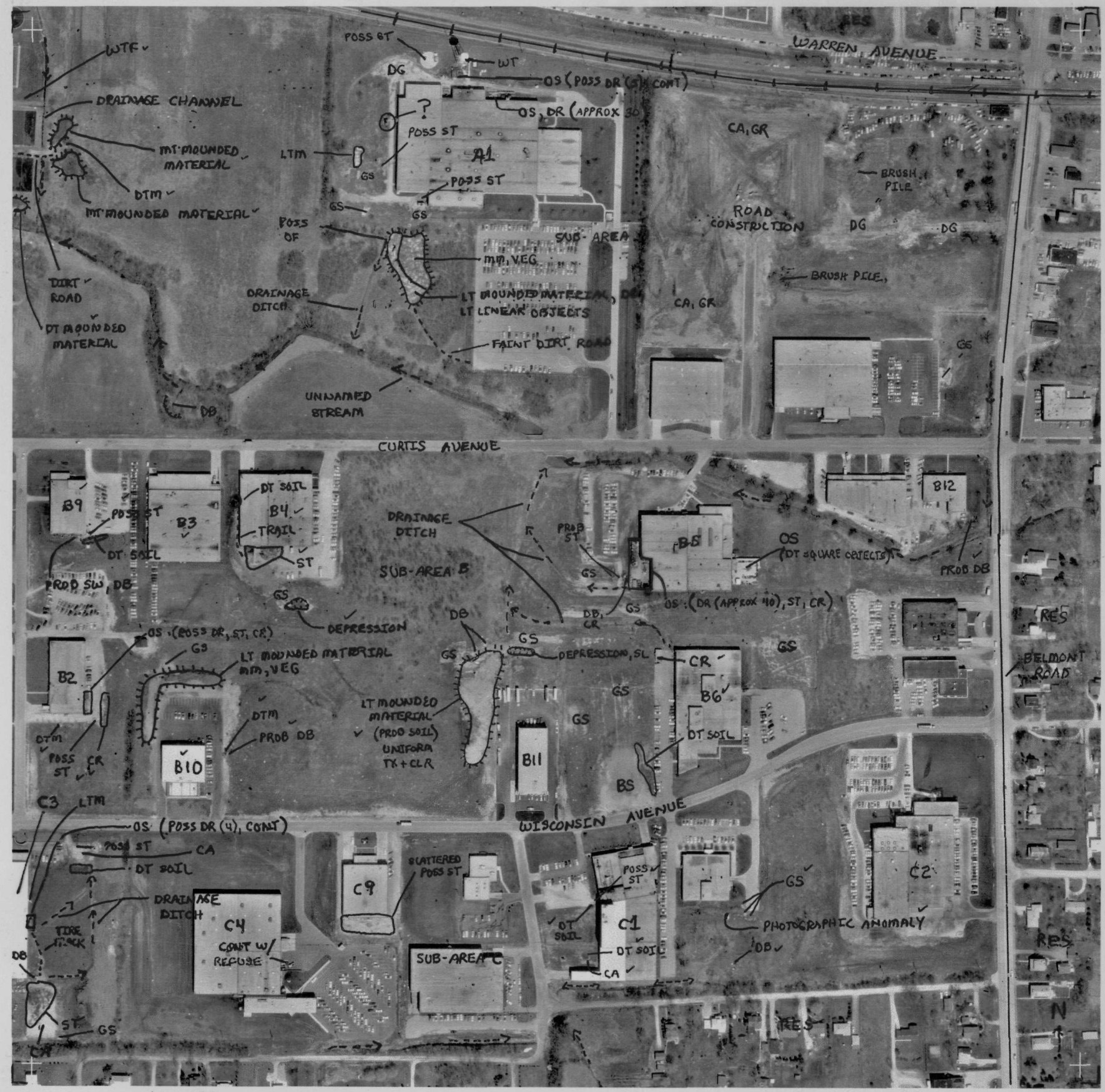
APRIL 25, 1972 (FIGURE 9)

This image is an enlargement of Figure 6.

Subarea A

In the western part of this subarea, a portion of the waste treatment facility and the drainage channel remain visible (also see Figure 6). Three mounds of uniform materials are also discernible, two of which are composed of medium-toned material and the other is dark-toned (also seen on Figure 6). An east-west oriented dirt road allows access to the easternmost of these mounds. An area of dark-toned material is located between these two mounds and may actually be saturated soil.

East of the waste treatment facility, building A!, the water tank, and circular-shaped pad (not annotated) with a possible stain remain visible. South of the water tank is an open storage area containing five possible drums and containers (CONT). A second, larger open storage area is located against the north wall of the building and contains approximately 30 drums. (NOTE: The outline of this open storage area was visible in the 1967 image [not annotated], but the sun angle precluded identification of the contents of the storage area). Just west of the circular pad is an area of disturbed ground. A possible stain, light-toned material, and ground scars are noted west of building A1. Immediately to the south of the building are a possible stain alongside the building and additional ground scars in the grassy areas (not annotated). South of the building is a sizable parking lot (not annotated). A faint dirt road extends to the northwest from the southwestern corner of the parking lot to a mound likely composed of different materials. Sparse vegetation covers the eastern two-thirds of the mound, indicating older deposits. The tops of the individual piles within this part of the mound appear weathered and rounded. The remaining portion of the mound is composed of debris, light-toned linear objects, and light-toned material. These light-toned materials are more-recent deposits, as evidenced by their coarse texture. Just to the west of this mound, the well-defined drainage ditch allowing liquid to empty into the unnamed stream, remains visible. The ditch may originate at a possible outfall on the west side of the mounded material.



4/25/72 DOWNERS GROVE SIDWELL

47

East of building A1, in the northeast section of subarea A, large sections have been cleared of vegetation and graded, likely in anticipation of additional building construction, as evidenced by the road construction in this general area. Two brush piles, areas of disturbed ground, and a ground scar are visible in this location.

Subarea B

In the western section of this subarea, building B9 (not previously annotated) is noted southeast of the intersection of Curtis Avenue and an unnamed street. Adjacent to the south side of the building are probable solid waste, a possible stain, debris, and dark-toned soil. To the east, an area of stained ground is noted immediately south of building B4. A trail extends north from the stained area and along the west side of the building, where it terminates at an area of dark-toned soil. The dirt road visible in 1967 which extended from the building, south to a depression in the field (not annotated) cannot be discerned. In addition, the depression south of building B4 is smaller than observed on previous images, and the ground surface near the west side of the depression is scarred (possibly from the use of heavy equipment), indicating filling activity.

Southwest of the depression are building B2 and new building B10. Adjacent to building B2 is an open storage area which contains stacked crates, a possible drum, and stained ground. More stacked crates, a possible stain, and dark-toned material are also observed near the building. In close proximity to building B10 is probable debris and dark-toned material. North of building B10 is an elongated, L-shaped mound consisting of uniform, light-toned mounded material (probable soil), mounded material covered with vegetation, and a ground scar.

In the central portion of subarea B is another new building (B11). Northwest of this building is an extensive mound of uniform, light-toned material (probable soil). Adjacent to and north of the mound are two small piles of debris, ground scars, and a depression containing standing liquid. Additional ground scars are observed in the vicinity of building B6 to the east, and an area of bare soil and dark-toned soil (possibly saturated) are observed between buildings B6 and B11. Near the northwestern corner of building B6 are numerous stacked crates.

To the north, two open storage areas remain located alongside building B5. The partially fenced (not annotated) open storage area adjacent to the east side of the building contains numerous dark-toned, neatly stacked square-shaped objects. The western open storage area contains approximately 40 drums, as well as stains and crates. Probable stains, debris, crates, and ground scars are observed just west of this open storage area. A drainage ditch which emanates from the westernmost open storage area channels surface runoff, first west and then to the northwest, where it joins a ditch that originates near building B6, and then north into the unnamed stream. To the east, near the intersection of Curtis Avenue and Belmont Road, probable debris is noted adjacent to the southeast corner of building B12 (not previously annotated).

Subarea C

In the western section of this enlarged photograph, on the east side of building C3 (only a sliver of the building is visible) are light-toned material and a small, fenced (not annotated) open storage area which contains four possible drums and containers. A trail (not annotated) of well-defined tire tracks connects the open storage area to a cleared area southeast of the building. A broad area of stained ground comprises most of the cleared area, although debris and a ground scar are also evident. It is likely that materials are being transported from near the open storage area and deposited in the cleared area. Two drainage ditches, one of which originates at the open storage area, and the other from alongside the stained area, channel liquids in a northerly direction toward a rectangular-shaped area of dark-toned soil (probably saturated). Just north of the dark-toned soil is a second cleared area and a possible stain.

East of building C3, near building C4, a container with refuse is noted. To the northeast scattered possible staining is observed adjacent to building C9 (not previously annotated). In the eastern section of this subarea, possible staining, two area of dark-toned soil, and a cleared area are noted along the west side of building C1. Between buildings C1 and C2 to the east, ground scars, debris, and a photographic anomaly are noted. The anomaly should not be confused with actual site features.

Subarea D

See Figures 6 and 8, respectively, for coverage of the northern and southern halves of this subarea.

APRIL 25, 1972 (FIGURE 10)

This image is an enlargement of Figure 6.

Subarea A

Only the southwesternmost corner of this subarea is covered on this enlargement. A faint dirt road extends from Curtis Avenue, north, to the impoundments (see Figure 6). Lack of clear definition to this road suggests it is little used. The southernmost ends of the two impoundments, which are sown completely in Figure 6, are also noted.

Subarea B

Southeast of the intersection of Curtis and Walnut avenues, a new building (B13) is visible. West of this building is uniform, medium-toned material (probable soil). In the parking lot (not annotated) south of the building, several areas of liquid pooling are evident. The same type of liquid pooling areas are noticeable at a second new building (B14) to the southeast. West of building B14 is an area of moist soil.

North of building B14 is building B7. West of the structure, the huge open storage area containing possible drums (approximately 12 total), uniformly placed light- and dark-toned linear objects, course textured dark-toned material, ground stains, and crates remains evident. Most of this area may be used as a drying area for finished products. Surface runoff within the open storage area enters a drainage ditch originating south of the building. Liquids in the ditch flow west and then north, and empty into to the unnamed stream (see Figure 6).

South of building B14, along the west side of building B1, are numerous stacked crates. A liquid pooling area is noted in the parking lot (not annotated) near the southwestern corner of the building. A short trail is visible commencing at the northwestern corner of the building and extending to the west into a field (not annotated) where, at its terminus, several light-toned objects are noted. In this field, to the west, several ground scars are observed.

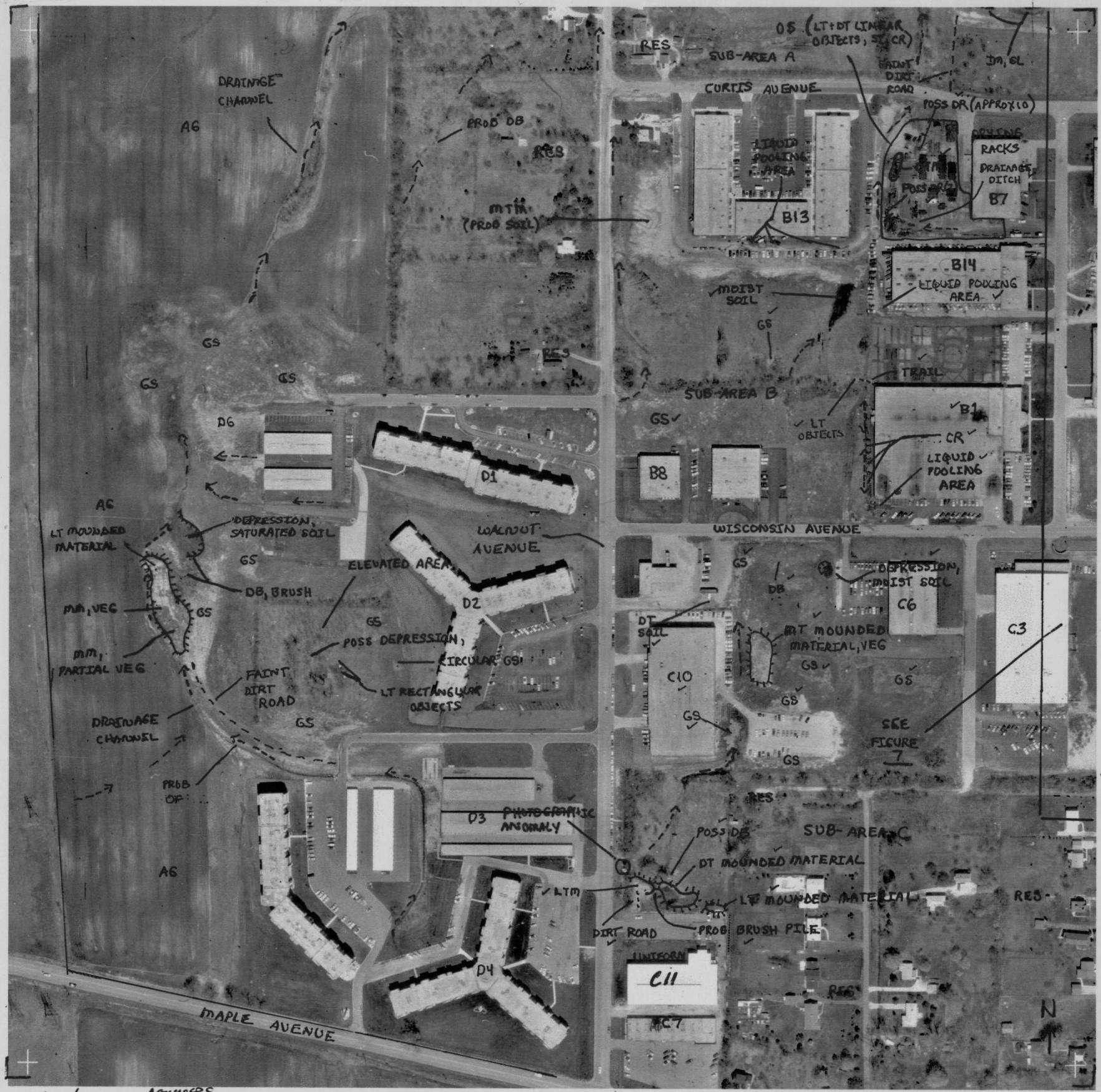
1972-078-e.tif

D4

A1

B12
B13
B14

C9
C10
C11



4/25/72 BOUNDERS GROVE SIDWELL

8/10

Subarea C

This image is an enlargement of Figure 6.

Southeast of the intersection of Wisconsin and Walnut avenues is a new building (C10). In close proximity to the building are dark-toned soil, medium-toned mounded material partially covered with vegetation (indicating recent deposition), and numerous ground scars (likely associated with past construction activity). Northeast of the building is a small pile of debris. Between the debris and building C6 to the east, the depression and moist soil observed in 1967 remain visible.

Northeast of the intersection of Walnut and Maple avenues, are buildings C7 and C11 (new structure). In the parking lot (not annotated) north of building C11 is a mound of light-toned material (possible debris). In the field (not annotated) west of the light-toned material are a mound composed of uniform, dark-toned material (possibly covered with sparse vegetation; not annotated), possible debris, a probable brush pile, and light-toned material (probable soil) which is both uniform in color and texture. A dirt road extends from the parking lot north, to this light-toned material, indicating recent deposition activity. A photographic anomaly in also noted in the area and should not be confused with actual features of environmental significance.

Subarea D

The four large buildings and building complex (D1 through D4) observed in 1967, and additional structures (not annotated) are visible in the southern section of this subarea. On the elevated area west of building D2 are a possible depression, light-toned rectangular-shaped objects, and several ground scars, one of which is circular in shape.

To the south of the elevated area, a well-defined drainage channel, originating just west of building D4, winds through the southern complex of buildings before making a more northerly path, allowing liquids to finally empty in the unnamed stream to the north (see Figure 6). West of building D3, a faint dirt road parallels the drainage channel for a short distance and then terminates at an imposing mound of material. This mound has been deposited in

the drainage channel and alters the flow of liquid. The tone of the materials within the location on the mound changes, likely resulting from the time of deposition. The uniform, light-toned material in the northern section of the mound is probably the most recently deposited material, as no vegetation is observed. The heavily vegetated surface in the central part of the mound suggests this was the earliest deposit. The southern part of the mound is only partially covered with vegetation. East of the mound, a ground scar with linear striations on the surface is visible and is the result of the use of heavy equipment. This ground scar indicates the position of the probable solid waste noted in 1967. Debris and brush deposits are noted between the ground scar and the saturated soil within the depression to the north, suggesting fill operations continue. North of the mound, additional ground scars and disturbed ground, probably due to past construction activity, are noted. In the residential section of the subarea, probable debris is observed in a ravine.

APRIL 26, 1975 (FIGURE 11)

The image available for 1975 has good resolution which allows more detailed examination of the features. Enlargements of sections of the site where there is significant activity are produced. The entire site is shown in Figure 9, with text describing the features in the northwestern, western, and southern portions of the site. The northeastern portion of the site is shown and discussed in Figure 10, and the central portion of the site discussed in Figure 11.

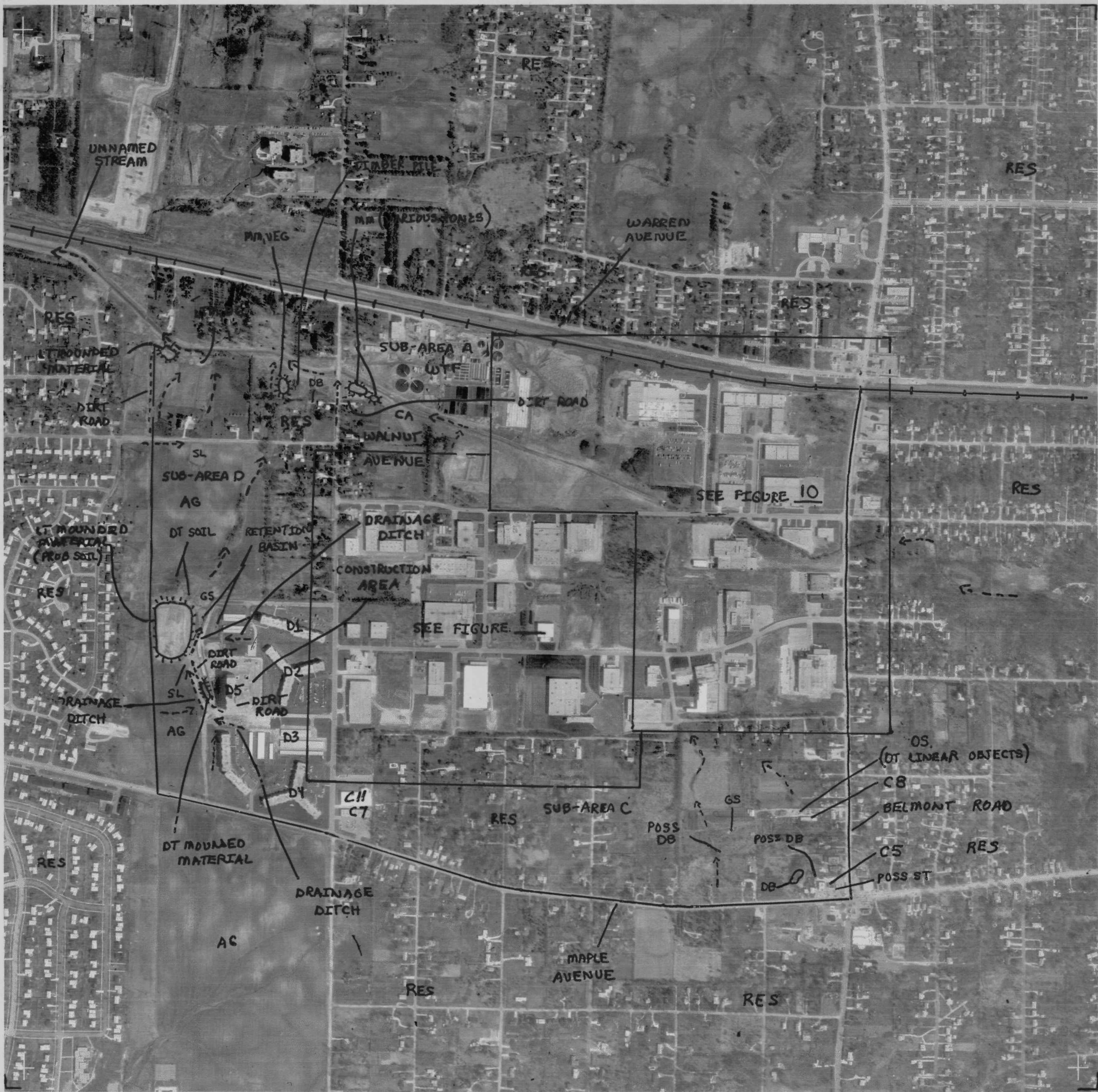
Several new buildings have been constructed on site since 1972. Only those buildings, or areas surrounding buildings, which demonstrate activity of environmental significance will be annotated. The area surrounding the site remains primarily residential.

Subarea A

Only the extreme western portion of this subarea is covered on this photograph. See the enlargements (Figures 10 and 11) for a detailed analysis of the remainder of this subarea.

East of Walnut Avenue, the waste treatment facility remains visible and continues to expand operations (not annotated). On the facility grounds several small mounds of material (not annotated) are observed. Tones of the materials vary from light to dark and may represent excavated soil from ongoing expansion.

South of the waste treatment facility and across the unnamed stream, which has been channelized (see Figure 10), a dirt road extends east from Walnut Avenue, to where the two mounds of material are visible. Uniform, light and dark materials (parts of the mounds may support vegetation) comprise both mounds. The ground surface east of the mounds has been cleared as a result of the channelization of the unnamed stream.



C8

4/26/75	DOWNERS GROVE	CHICAGO AERIAL SURVEY	FRAMES 37, 38, 39 8IC 65375, 65376, 67086	MISSION 75100	SCALE 24K	PHOTO SCALE

Subarea B

See the enlargements (Figures 10 and 11) for the detailed analysis of this subarea.

Subarea C

In the eastern portion of the subarea, the open storage area containing dark-toned linear objects remains in the vicinity of building C8. To the south, in the vicinity of building C5 are a possible stain, several small piles of debris (annotated as one feature), and a small pile of possible debris. In a field (not annotated) to the northwest, possible debris and a ground scar are noted. No environmentally significant activity is observed near building C7 or the remaining portions of the residential area.

Subarea D

In a residential section of the subarea, west of Walnut Avenue and south of the unnamed stream, debris, a timber pile, and mounded material covered with vegetation are visible. To the west a dirt road located just west of the site boundary extends north from an unnamed residential road to a mound of uniform, light-toned material (probable soil) adjacent to the unnamed stream. Just to the east, in a field (not annotated) north of residential homes, is light-toned material and disturbed ground. In the agricultural field to the southwest, along the side of an unnamed road, the pool of standing liquid observed in 1972 remains visible. The pooling of liquid at this location may be the result of the spring thaw and channeled runoff from the residential areas to the west, and the agricultural field to the south; although defined drainage patterns cannot be identified in the field.

In the southern section of this subarea, numerous large buildings and the building complex (D1 through D4) observed in 1972 remain visible. Additional structures (not all annotated) are also observed, such as new building D5, which is part of a larger construction area that was built on the former elevated area seen on past images. This construction site has been graded and it is likely that the materials removed from the site have been deposited to the northwest, forming a conspicuous mound of uniform and finely textured

light-toned material (probable soil). No vegetation is visible on the surface of the mound, suggesting recent deposition. The mound is accessed via a dirt road from the southeast. A second mound, composed of dark-toned material, is noted along this access road. East of the light-toned mound are two retention basins. Materials from the excavation of these basins might also have been deposited on the mound. Ground scars are visible to the northeast.

Well-defined drainage ditches are noted throughout the complex of buildings, and it appears runoff is to be channeled into the retention basins. No liquid is present in the basins, although a well-defined drainage ditch does connect an area of standing liquid to the western retention basin southeast of the light-toned mound.

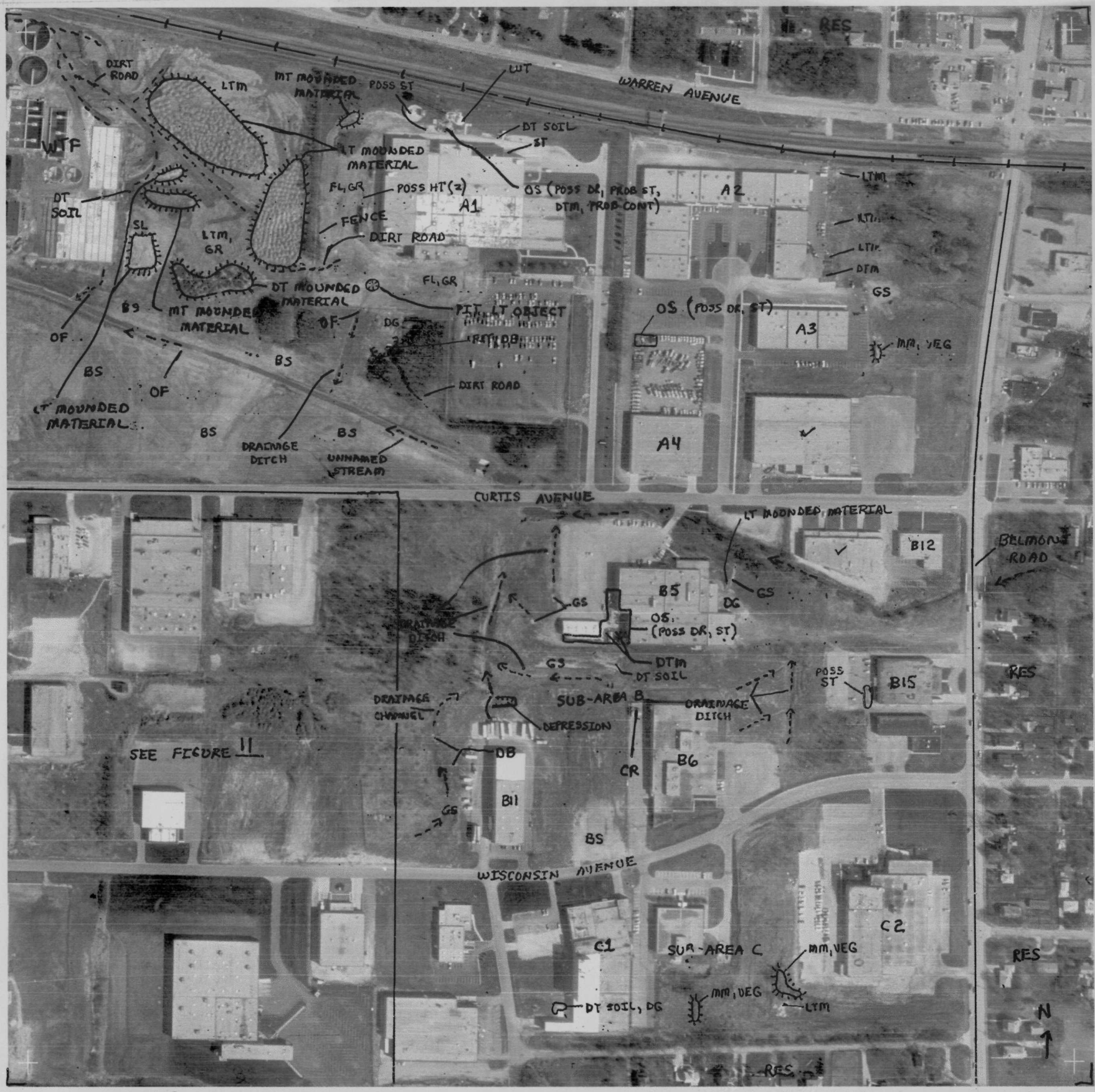
APRIL 26, 1975 (FIGURE 12)

This image is an enlargement of Figure 9.

Subarea A

In the western part of this subarea, a portion of the expanding waste treatment facility remains visible (also see Figure 9). The drainage ditch previously identified, has either been diverted or covered, causing the use of the outfall at the unnamed stream to be used for drainage. A second outfall is visible on the south bank of the stream, as well. A dirt road and several spurs extend east from the treatment facility, where six separate groupings of mounded material have been deposited (in 1972, this area was an open field). Four of the mounds are composed of mostly uniform, light-toned material. Of these four, the texture of the two largest mounds are more course than the other two mounds of similar tone. Standing liquid is noted by southwesternmost of these four mounds. A fifth mound, near the facility, is composed of uniform, medium-toned material (probable soil), although the ground surface abutting the western part of this mound is very dark. The southernmost mound is composed of uniform, dark-toned material with a fine texture, and may be in the process of being buried (possible landfarming). A lip (not annotated) has formed on the north side of this mound, where the grading process has stopped. In addition, the light-toned material that makes-up the ground surface around the mounds displays numerous striations caused by the use of heavy equipment to manipulate and grade the remaining materials.

East of the waste treatment facility, building A1, the water tank, and circular-shaped pad (not annotated) with a possible stain remain visible. South of the water tank is an open storage area containing 7 possible drums, probable stains, dark-toned material, and probable containers. The open storage area located against the north wall of the building in the 1972 image has been enclosed as an addition (not annotated) to building A1. Stained ground is visible on the east side of this former open storage area and just to the north is dark-toned soil. West of the circular-shaped pad is medium-toned mounded material (probable soil). West and south of the building, fill has been deposited and graded. Two possible horizontal storage tanks (HT) are observed west of the building. Southwest of the building, a break in the fence



A1
A2
A3
A4

B14
B15

4/26/75

DOWNERS GROVE

PHOTO SCALE

1"=200'

is visible, and a dirt road links building A1 to the mounded material to the west. Also to the southwest of the building is a pit containing a light-toned object, an outfall, and the drainage ditch which carries liquid south into the channelized section of the unnamed stream. East of the drainage ditch are disturbed ground and a pit where more debris is noted. The remnants of the dirt road which in 1972, connected this area to the parking lot (not annotated) to the east, remains discernible through the small patch of trees (not annotated); although, no longer can it be connected to the parking lot. Due to the channelization process, bare soil, scarred with striations from earth-moving equipment, is noted north and south of the stream.

East of building A1, in the northeast section of subarea A, two new buildings (A2 and A3) are visible. Three small piles of light-toned material, and dark-toned material (possible linear objects) are located east of building A2. A ground scar, and mounded material possibly covered with sparse vegetation are located east of building A3. An open storage area containing possible drums and stains is located in the northwest part of the parking lot (not annotated) associated with building A4, a structure that was present in the 1972 image, but was not annotated.

Subarea B

In the northern section of this portion of the subarea, one open storage area remains visible along the west side of building B5. Possible drums, stains, and dark-toned material are observed within it. Small grounds scars are noted nearby and two drainage ditches, which originate near the open storage area, channel surface runoff into the unnamed stream to the north. A second, partially fenced open storage area that was noted on the east side of this building in 1972 is no longer visible. A building addition (not annotated) has been constructed in this location since that time. A well-defined, linear ground scar starts at the north side of this new building addition and terminates near the stream to the north. The disturbed ground and the small pile of light-toned mounded material adjacent to the scar suggest this is the location of a buried pipeline. To the east, near the intersection of Curtis Avenue and Belmont Road, no activity of environmental significance is noted near building B12.

Southwest of building B5, two small piles of debris and a ground scar are observed near a natural drainage channel west of building B11. To the north of the building, a deep, well-defined drainage ditch, originating at the parking lot (not annotated) north of the building, appears to have eroded away the western section of the depression seen in 1972. Along Wisconsin Avenue, east of building B11, the patch of bare soil remains evident. The elevation of this area may be slightly lower than the surrounding area; thus, allowing liquid to pool and inhibit the growth of vegetation. Stacked crates remain visible near building B6. Northeast of this building are several drainage ditches. Possible stains are noted to the east along the west side of building B15 (not annotated on previous images) located on Belmont Avenue.

Subarea C

In the eastern section of this subarea are buildings C1 and C2. Dark-toned soil and disturbed ground are observed along the west side of building C1. To the east is mounded material, which appears to be covered with vegetation. Southwest of building C2, a second vegetaation-covered mound of material is visible. In addition, small piles of uniform, light-toned material are evident beside the latter mound. Lack of vegetation on the light-toned material suggests the deposition may be recent.

APRIL 26, 1975 (FIGURE 13)

This image is an enlargement of Figure 9.

Subarea A

In the southwestern corner of this subarea, a dirt road connects Curtis Avenue to the two large impoundments (without standing liquid) located in the field (not annotated). Lack of vegetation, ground scars, caused by earth-moving equipment, and construction activity suggest these impoundments are being readied for future use.

Subarea B

In the western portion of this subarea and southeast of the intersection of Curtis and Walnut avenues, possible staining and disturbed ground are observed west of building B13. East of building B13, the broad open storage area associated with building B7 remains apparent. This area contains stains (not all individually annotated), many neatly stacked light- and dark-toned linear objects, a considerable number of linear objects that are not well organized or neatly stacked (northern and western sections of the open storage area), dark-toned objects, and both light- and dark-toned material exhibiting a coarse texture. Most of this area may be used as a drying area for finished products. Surface runoff within the open storage probably enters the drainage ditch west of the open storage area, but clear drainage patterns, such as those observed in the 1972 image, cannot be identified. Liquids in the ditch flow north and underneath Curtis Avenue, and eventually empty into to the unnamed stream (see Figure 9).

South of the open storage area, moist soil and a cleared area are noted west of building B14. Further south, near Wisconsin Avenue, a faint dirt road is noted just west of building B1. Two ground scars are visible, the first of which is located at the intersection of the dirt road and Wisconsin Avenue, and the second is in the field (not annotated) west of the dirt road. This scar is accessed via a trail which extends from the dirt road. A liquid pooling area remains visible in the parking lot (not annotated) near the southwestern corner of the building.

1975-38-c.tif

4/26/75

DOWNERS GROVE

PHOTO SCALE 1" = 200'

In the eastern section of this subarea, southeast of the intersection of Curtis Avenue and an unnamed street, two possible drums, probable staining, dark-toned soil, and disturbed ground are observed beside building B9 (not previously annotated). To the east a cleared area is located south of building B3, to the east possible stained ground is noted south of building B4. In addition, dark-toned soil, a ground scar, light-toned material, and a depression are evident south of building B4. The ground surface near the depression is covered with vegetation, suggesting activity immediately south of building B4 has decreased when compared to previous images.

To the southwest are building B2 and B10. Adjacent to building B2 are dark-toned material and probable staining. An open storage area was identified at this location in 1972. In the field (not annotated) south of this building is scattered debris and disturbed ground. Additional areas of disturbed ground is noted in the field (not annotated) east of this building. To the east and north of building B10, are two mounds covered with vegetation are noted as is a rectangular-shaped cleared area. Further east is a prominent brush pile, probably composed of the vegetation cleared from the field (not annotated) to the south, near Wisconsin Avenue. Ground scars from the use of earth-moving equipment, and numerous erosion gullies are visible on the surface of the cleared area. This location is likely being readied for future development. Immediately east of the cleared area is uniform, light-toned mounded material that is probably composed of soil.

Subarea C

Southeast of the intersection of Wisconsin and Walnut avenues, dark-toned soil and mounded material covered with vegetation are noted northeast of building C10. Immediately east of this building is a long area of scattered probable debris and a container with refuse. In the field (not annotated) south of building C10 is mounded material covered with vegetation. Both east and west of this mound, on the fringe of a parking lot (not annotated), small piles of light-toned material are noted (the easternmost pile was visible in 1972). A dirt road extends north from the eastern pile of light-toned material into the field, where it terminates at a stand of trees (not annotated). In the parking area, a flow path appears to be originate at an automobile (not annotated). To the northeast, between buildings C10 and C6, dark-toned soil is

observed. A depression and moist soil was observed at this location on previous images; however, a depression cannot be confirmed on this image. South of building C6, the ground surface has been cleared of vegetation, likely is response to future development.

To the east, on the east side of building B3, a light-toned object is noted, as is a small, enclosed open storage area with a possibly stained ground surface. No other features can be discerned in this open storage area where, in 1972, four possible drums and containers were observed. A dirt road connects the open storage area to the cleared area southeast of the building. Stained ground remains on the cleared area, but it is not quite as heavy or widespread as the staining observed in 1972. The well-defined dirt road (identified as a trail in 1972) suggests that materials continue to be transported from near the open storage area and deposited in the cleared area. Also in the vicinity are dark-toned soil, disturbed ground, possible disturbed ground, and ground scars. A linear-shaped ground scar is noted at the location of a drainage ditch observed in 1972.

East of building C3, near building C4, a container with refuse continues to be noted. To the east, possible staining is observed immediately south of building C9.

Subarea D

In the residential section in the northern portion of this subarea, debris is noted in a field (not annotated).

REFERENCES

MAPS

Source[a]	Figure	Name	Scale	Date
USGS	1	United States	1:2,500,000	1972
USGS	2		1:24,000	19

COLLATERAL INFORMATION

EPA.
LMS (Lockheed Martin Services). 2001. Master Quality Assurance Project Plan. Prepared for EPA Environmental Sciences Division. Contract 68-D-00-267. Las Vegas, Nevada.

AERIAL PHOTOGRAPHS

Photo source[a]	Figure	Date of acquisition	Original scale	Film type[b]	Mission I.D.	Source frame #	EPIC ID #
CAS	3	04-13-56	1:20,000	B&W	-	606-609	65365,65366, 67090,67091
CAS	4	11-28-63	1:24,000	B&W	63400	392-395	65369,65370, 67088,67089
ASCS	5-7	10-19-67	1:20,000	B&W	BWS	270-272	65371,65372, 66862
SIDWELL	8-10	04-25-72	1:12,000	B&W	-	676,678,680	66866-66868
CAS	11-13	04-26-75	1:24,000	B&W	75100	37-39	65375,65376, 67086

[a]ASCS U.S. Department of Agriculture, Agricultural Stabilization and Conservation Service, Salt Lake City, Utah
CAS Chicago Aerial Survey, , Illinois
SIDWELL Sidwell Corporation, South Chicago, Illinois
USGS U.S. Department of Interior, U.S. Geological Survey, Washington, D.C.
[b]B&W Black-and-white
CC Conventional Color